Virology

Volume 168
1989

EDITORS

W. K. Joklik, EDITOR-IN-CHIEF A. Berk R. Haselkorn M. M.-C. Lai F. Rapp
J. K. Rose J. G. Shaw M. D. Summers P. K. Vogt

ASSOCIATE EDITORS

P. Ahlquist
G. Air
C. Baglioni
A. K. Banerjee
C. Basilico
K. L. Beemon
T. Ben-Porat
K. I. Berns
J. M. Bishop
H. R. Bose, Jr.
T. R. Broker
G. E. Bruening
M. J. Buchmeier
E. Carstens
B. J. Carter
J. M. Coffin
C. N. Cole
R. C. Condit
J. A. Cooper
D. L. Court
R. J. Courtney
S. Dales
W. G. Dougherty
E. Ehrenfeld
R. N. Eisenman
M. K. Estes
M. Feiss
B. N. Fields
S. J. Flint
W. R. Folk
R. I. B. Francki
D. A. Galloway
E. P. Geiduschek
C. Georgopoulos
W. Gerhard
R. M. Goodman
A. Granoff
D. E. Griffin
T. Grodzicker
M. Hayman
P. Hearing
K. V. Holmes
M. S. Horwitz
M. M. Howe
R. Hull
E. Hunter
T. Hunter
A. O. Jackson
J. E. Johnson
J. D. Keene
E. Kieff
D. F. Klessig
E. Knight, Jr.
D. M. Knipe
M. Lai
R. A. Lamb
L. Levintow
D. M. Livingston
R. B. Luftig
W. Mason
G. McFadden
J. E. Mertz
L. K. Miller
P. Model
T. J. Morris
B. Moss
S. A. Moyer
F. A. Murphy
J. R. Nevins
D. J. O'Callaghan
P. Palese
P. Palukaitis
E. Paoletti
J. T. Parsons
M. E. Peeples
D. J. Pickup
P. M. Pitha-Rowe
R. H. Purcell
V. Racaniello
H. R. Revel
H. D. Robertson
H. L. Robinson
W. S. Robinson
G. F. Rohrmann
B. Roizman
J. A. Rose
L. B. Rothman-Denes
C. E. Samuel
P. A. Schaffer
B. S. Schaffhausen
M. J. Schlesinger
P. B. Sehgal
C. J. Sherr
G. E. Smith
V. Stollar
J. H. Strauss
B. Sugden
D. F. Summers
M. M. Susskind
R. I. Swanstrom
R. H. Symons
P. Tattersall
M. J. Tevethia
D. A. Thorley-Lawson
C. P. Van Beveren
I. M. Verma
L. E. Volkman
E. K. Wagner
F. Wong-Staal
J. S. Youngner
N. D. Zinder

ACADEMIC PRESS, INC.
Harcourt Brace Jovanovich, Publishers
San Diego New York Boston
London Sydney Tokyo Toronto

Copyright © 1989 by Academic Press, Inc.

All Rights Reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (27 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U. S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1989 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0042-6822/89 $3.00

MADE IN THE UNITED STATES OF AMERICA

Contents of Volume 168

Number 1, January 1989

Heterogeneity in mRNA of Human Papillomavirus Type-6 Subtypes in Respiratory Tract Lesions	Peter Ward and Phoebe Mounts	1
Mutants with Changes Within or Near a Hydrophobic Region of Simian Virus 40 Large Tumor Antigen Are Defective for Binding Cellular Protein p53	Keith W. C. Peden, Ashok Srinivasan, Joshua M. Farber, and James M. Pipas	13
Expression of EBNA-3 Family in Fresh B Lymphocytes Infected with Epstein–Barr Virus	Kei Sawada, Masahiko Yamamoto, Takako Tabata, Mary Smith, Akiko Tanaka, and Meihan Nonoyama	22
Retroviral-Mediated Transfer and Expression of Hepatitis B e Antigen in Human Primary Skin Fibroblasts and Epstein–Barr Virus-Transformed B Lymphocytes	A. K. Raney, D. R. Milich, J. L. Hughes, J. Sorge, F. V. Chisari, M. U. Mondelli, and A. McLachlan	31
Intra- and Extracellular Distribution and Immunochemical Characterization of Hepatitis B Virus Nucleocapsid Proteins Produced by a Human Hepatoma Cell Line Transfected with Cloned Viral DNA	Hitoshi Ohori and Keizaburoh Matsuda	40
A "Zinc-Finger"-Type Binding Domain in Tobacco Streak Virus Coat Protein	Paul C. Sehnke, Ava M. Mason, Steven J. Hood, Richard M. Lister, and John E. Johnson	48
A Rat Mutant Cell Clone Showing Temperature-Dependent Transformed Phenotypes with Functional Expression of the *src* Gene Product	Hirokazu Inoue, M. Koji Owada, Masuo Yutsudo, and Akira Hakura	57
The Herpes Simplex Virus Type 1 Immediate-Early Protein ICP27 Is Obligately Required for the Accumulation of a Cellular Protein during Viral Infection	J. K. Estridge, L. M. Kemp, N. B. La Thangue, B. S. Mann, A. S. Tyms, and D. S. Latchman	67
Assignment of Wound Tumor Virus Nonstructural Polypeptides to Cognate dsRNA Genome Segments by *in Vitro* Expression of Tailored Full-Length cDNA Clones	Zhengkai Xu, John V. Anzola, and Donald L. Nuss	73
Biological and Molecular Characterization of Human Immunodeficiency Virus (HIV-1_{BR}) from the Brain of a Patient with Progressive Dementia	Rita Anand, Richard Thayer, A. Srinivasan, S. Nayyar, Murray Gardner, Paul Luciw, and Satya Dandekar	79
Biologic and Molecular Genetic Characteristics of a Unique MCF Virus That Is Highly Leukemogenic in Ecotropic Virus-Negative Mice	Sisir K. Chattopadhyay, Bahige M. Baroudy, Kevin L. Holmes, Torgny N. Fredrickson, Marilyn R. Lander, Herbert C. Morse III, and Janet W. Hartley	90
Characterization of Proteins Encoded by the Epstein–Barr Virus Transactivator Gene BMLF1	Kam-Meng Wong and Arnold J. Levine	101
Modification of Protein Synthesis Initiation Factors and the Shut-off of Host Protein Synthesis in Adenovirus-Infected Cells	Robert P. O'Malley, Roger F. Duncan, John W. B. Hershey, and Michael B. Mathews	112
Mapping of a Phosphorylation Site in the 176R (19 kDa) Early Region 1B Protein of Human Adenovirus Type 5	C. Jane McGlade, Michel L. Tremblay, and Philip E. Branton	119

Characterization of Novel Populations of MVM Virions Containing Covalent DNA–Protein Complexes — Emanuel A. Faust, Katarzyna Brudzynska, and Julie Morgan 128

Virus–Ribosome Complexes from Cell-Free Translation Systems Supplemented with Cowpea Chlorotic Mottle Virus Particles — J. W. Roenhorst, B. J. M. Verduin, and R. W. Goldbach 138

Studies on the Mechanism of the Antiviral Activity of Ribavirin against Reovirus — James T. Rankin, Jr., Stephen B. Eppes, James B. Antczak, and Wolfgang K. Joklik 147

Short Communications

Human Rhinovirus Serotype 2: *In Vitro* Synthesis of an Infectious RNA — Markus Duechler, Tim Skern, Dieter Blaas, Berthold Berger, Wolfgang Sommergruber, and Ernst Kuechler 159

Monoclonal Antibodies to the Matrix (E1) Glycoprotein of Mouse Hepatitis Virus Protect Mice from Encephalitis — John O. Fleming, Richard A. Shubin, Mark A. Sussman, Nancy Casteel, and Stephen A. Stohlman 162

Sequence of the Latency-Related Gene of Herpes Simplex Virus Type 1 — Steven L. Wechsler, Anthony B. Nesburn, John Zwaagstra, and Homayon Ghiasi 168

Different Palmitoylation of Paramyxovirus Glycoproteins — Michael Veit, Michael F. G. Schmidt, and Rudolf Rott 173

The Use of Sulfite to Study the Mechanism of Membrane Fusion Induced by E_1 of Semliki Forest Virus — Adames Omar and Hans Koblet 177

The Orientation of the Adenovirus Fiber and Its Anchor Domain Identified through Molecular Mimicry — Joseph M. Weber, Brian G. Talbot, and Lyne Delorme 180

Identification of the σ1S Protein in Reovirus Serotype 2-Infected Cells with Antibody Prepared against a Bacterial Fusion Protein — L. William Cashdollar, Patricia Blair, and Susan Van Dyne 183

Verapamil and Chlorpromazine Inhibit the Budding of Sindbis and Vesicular Stomatitis Viruses from Infected Chicken Embryo Fibroblasts — Milton J. Schlesinger and Donna Cahill 187

Identification of the 5′ End of the Rubella Virus Subgenomic RNA — Teryl K. Frey, Lee D. Marr, Anthony Sanchez, and Robert B. Simmons 191

Expression of Human Papillomavirus Type 16 E7 Gene Induces DNA Synthesis of Rat 3Y1 Cells — Hironori Sato, Akemi Furuno, and Kunito Yoshiike 195

Author Index for Volume 168, Number 1 200

Number 2, February 1989

Conserved Structural Domains in the 5′-Untranslated Region of Picornaviral Genomes: An Analysis of the Segment Controlling Translation and Neurovirulence — Evgeny V. Pilipenko, Vladimir M. Blinov, Lyudmila I. Romanova, Alexander N. Sinyakov, Svetlana V. Maslova, and Vadim I. Agol 201

Effect of an Amber Mutation in the Herpes Simplex Virus Thymidine Kinase Gene on Polypeptide Synthesis and Stability — Alice F. Irmiere, M. Michele Manos, Jennie G. Jacobson, James S. Gibbs, and Donald M. Coen 210

Low Levels of Herpes Simplex Virus Thymidine–Thymidylate Kinase Are Not Limiting for Sensitivity to Certain Antiviral Drugs or for Latency in a Mouse Model — Donald M. Coen, Alice F. Irmiere, Jennie G. Jacobson, and Kelvin M. Kerns 221

Lymphocytic Choriomeningitis Virus Selectively Alters Differentiated but Not Housekeeping Functions: Block in Expression of Growth Hormone Gene Is at the Level of Transcriptional Initiation — Linda S. Klavinskis and Michael B. A. Oldstone 232

Repression of Transcription from the *b2-att* Region of Coliphage λ by Integration Host Factor — Józef Kur, Noaman Hasan, and Waclaw Szybalski 236

Specific Sequence Deletions in Two Classes of Murine Leukemia Virus-Related Proviruses in the Mouse Genome — Lan-Yang Ch'ang, Wen K. Yang, Fred E. Myer, Chong K. Koh, and Lawrence R. Boone 245

A Small Deletion in the Carboxy Terminus of the Viral *myc* Gene Renders the Virus MC29 Partially Transformation Defective in Avian Fibroblasts — Paula J. Enrietto 256

Human Immunodeficiency Virus Infection Studied in CD4-Expressing Human–Murine T-Cell Hybrids — M. Tersmette, J. J. M. Van Dongen, P. R. Clapham, R. E. Y. De Goede, I. L. M. Wolvers-Tettero, A. Geurts Van Kessel, J. G. Huisman, R. A. Weiss, and F. Miedema 267

Mutations at the Cleavage Site of the Hemagglutinin Alter the Pathogenicity of Influenza Virus A/Chick/Penn/83 (H5N2) — Masanobu Ohuchi, Michaela Orlich, Reiko Ohuchi, Barry E. J. Simpson, Wolfgang Garten, Hans-Dieter Klenk, and Rudolf Rott ... 274

Glycoprotein Evolution of Vesicular Stomatitis Virus New Jersey — Stuart T. Nichol, Joan E. Rowe, and Walter M. Fitch 281

Control of Reovirus Messenger RNA Translation Efficiency by the Regions Upstream of Initiation Codons — Michael R. Roner, R. K. Gaillard, Jr., and Wolfgang K. Joklik 292

A Point Mutation in the Poliovirus Polymerase Gene Determines a Complementable Temperature-Sensitive Defect of RNA Replication — Henri Agut, Katherine M. Kean, Odile Fichot, Joan Morasco, James B. Flanegan, and Marc Girard 302

Separation of Host Range from Transformation Functions of the hr-t Gene of Polyomavirus — Robert L. Garcea, David A. Talmage, Alan Harmatz, Robert Freund, and Thomas L. Benjamin 312

Efficient Synthesis of Adeno-Associated Virus Structural Proteins Requires Both Adenovirus DNA Binding Protein and VA I RNA — J. E. Janik, M. M. Huston, K. Cho, and James A. Rose 320

Variable and Constant Regions in African Swine Fever Virus DNA — Rafael Blasco, Montserrat Agüero, José M. Almendral, and Eladio Viñuela 330

Intraviral Homology and Subgenomic RNAs of Pepper Ringspot Virus — Sandra T. Bergh and Albert Siegel 339

Location and Nucleotide Sequence of the 25K Protein Missing from Baculovirus Few Polyhedra (FP) Mutants — Burton Beames and Max D. Summers 344

Nucleotide Sequence, Transcriptional Mapping, and Temporal Expression of the Gene Encoding p39, a Major Structural Protein of the Multicapsid Nuclear Polyhedrosis Virus of *Orgyia pseudotsugata* — G. W. Blissard, R. L. Quant-Russell, G. F. Rohrmann, and G. S. Beaudreau 354

Chlorella Viruses Contain Linear Nonpermuted Double-Stranded DNA Genomes with Covalently Closed Hairpin Ends — Jan Rohozinski, Lois E. Girton, and James L. Van Etten 363

DNA Looping Induced by Bacteriophage λ O Protein: Implications for Formation of Higher Order Structures at the λ Origin of Replication — Maria Schnos, Kenneth Zahn, Frederick R. Blattner, and Ross B. Inman 370

Cloning of the Herpes Simplex Virus ICP4 Gene in an Adenovirus Vector: Effects on Adenovirus Gene Expression and Replication — Robert Spessot, Kevin Inchley, Thomas M. Hupel, and Silvia Bacchetti 378

Localization of Multiple TMV Encapsidation Initiation Sites on *rbcL* Gene Transcripts — C. D. Atreya and A. Siegel 388

Saturable Binding Sites Mediate the Entry of African Swine Fever Virus into VERO Cells — Antonio Alcamí, Angel L. Carrascosa, and Eladio Viñuela 393

Restriction of HIV-1 Replication in Promonocytic Cells: A Role for IFN-α — Katherine Macé, Madeleine Duc Dodon, and Louis Gazzolo 399

Short Communications

African Swine Fever Virus-Induced Proteins on the Plasma Membranes of Infected Cells — C. Alcaraz, B. Pasamontes, F. Ruiz Gonzalvo, and J. M. Escribano 406

Mengo Virus Maturation Is Accompanied by C-Terminal Modification of Capsid Protein VP1 — Ulrike Boege and Douglas G. Scraba 409

A Recent Field Isolate of Sendai Virus Has a Temperature-Sensitive HN Glycoprotein — Wendy L. Gorman and Allen Portner 413

Recovery of Structurally Intact and Infectious Poliovirus Type 1 from HeLa Cells during Receptor-Mediated Endocytosis — Peter Willingmann, Heide Barnert, Heinz Zeichhardt, and Karl-Otto Habermehl 417

Nucleotide Sequence of the Lassa Virus (Josiah Strain) S Genome RNA and Amino Acid Sequence Comparison of the N and GPC Proteins to Other Arenaviruses — David D. Auperin and Joseph B. McCormick 421

Complete Nucleotide Sequence of the Matrix Protein mRNA of Mumps Virus — Narayanasamy Elango 426

Sequence Analysis of the Gene Encoding the Serotype-Specific Glycoprotein (VP7) of Two New Human Rotavirus Serotypes — Kim Y. Green, Yasutaka Hoshino, and Nobuko Ikegami 429

Author Index for Volume 168 434

Subject Index for Volume 168 436